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ALLEGED HALL STACKS

THE

MATHER - PERKINS

INCANDESCENT SYSTEM.





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R. H. MATHER,

} CONSULTING

ROB'T CHENEY, VICE-PRES.

N. T. PULSIFER, GEN. MGR.

WM. A. ANTHONY,

} ELECTRICIANS.

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# THE MATHER ELECTRIC CO.,

MANCHESTER, CONN.

# ELECTRIC LIGHTING

—AND—

## TRANSMISSION OF POWER.

Incandescent Lamps and Appliances for Incandescent Lighting.

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MAIN OFFICE AND MANUFACTORY,  
MANCHESTER, CONN.

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NEW YORK OFFICE,  
33 Broadway.

BOSTON OFFICE,  
143 Federal St.

CHICAGO OFFICE,  
38 and 40 La Salle St.

CINCINNATI OFFICE,  
Carlisle Building.

1887





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## ELECTRIC LIGHTING.

13 H. 31 K. 31  
ON account of superior cleanliness, safety, economy and healthfulness, electricity is fast superseding all other forms of applied lighting. In the incandescent system the illumination is produced by a slender filament glowing intensely in a vacuum. The current is controlled by a switch-key, dispensing with matches and other combustibles. The atmosphere of the room is not vitiated in the least by any number of incandescent lamps. They throw off no gases whatever—nothing which can injure either the health or the most delicate substance. If a lamp is broken it is instantly extinguished.

Aside from the wires used in transmitting the energy, a plant for incandescent lighting consists essentially of the dynamo and the lamps. The dynamo converts the motion of the water-wheel or steam engine into electricity, which can be conveyed by conductors to any required point, and there, turned upon the filament in the lamp, causes it to glow with a bright and steady light.

13 H. 31 K. 31  
In form and mechanism, the dynamo of the "Mather" system is constructed on strictly scientific principles, the aim being to develop the maximum of electrical energy from the least expenditure of power. Although unique in appearance, its attractiveness to the eye further illustrates the truth that the most perfect in design approaches most nearly to our ideal of the beautiful. In operation, when cared for, it runs without sparks, noise or jar, and is self-regulating.

The following Figs. exhibit the magnet, armature, base and complete machine :

754516



## MAGNET.

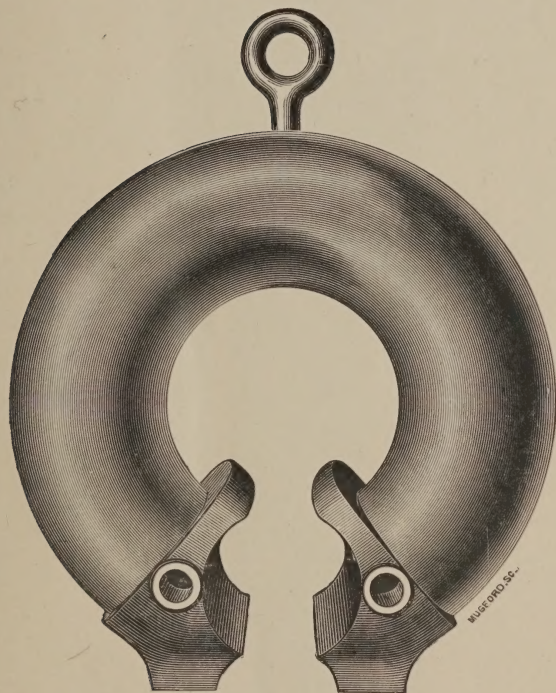


FIG. 1.





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ARMATURE.

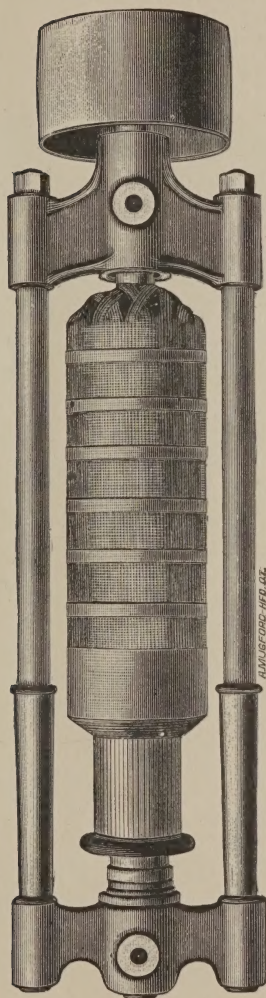


FIG. 2.



## BASE AND COMPLETE MACHINE.

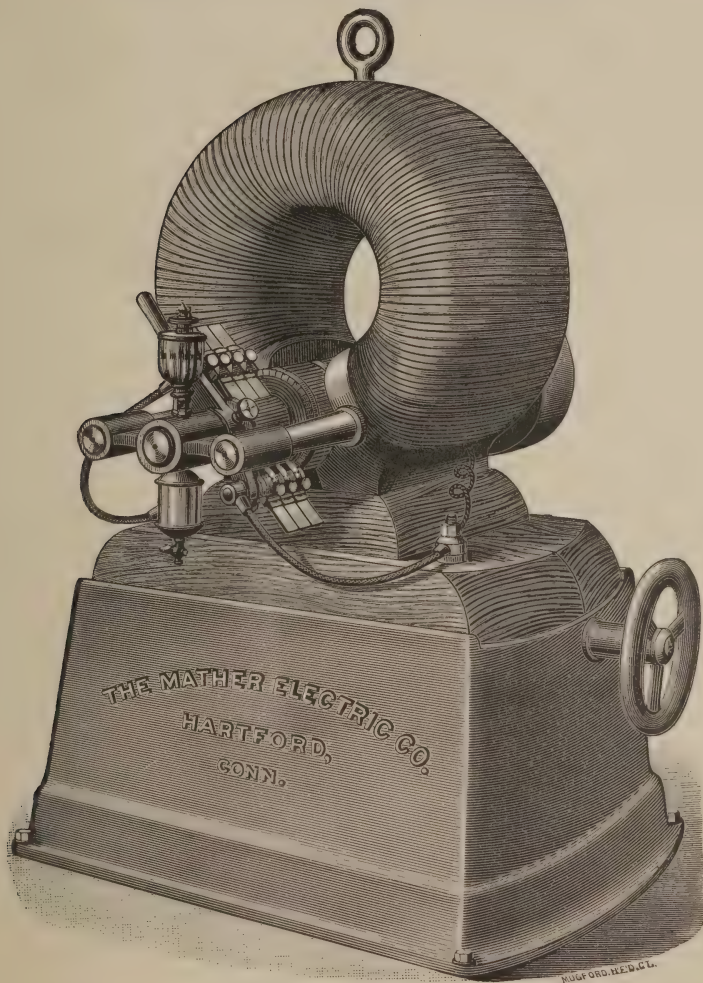


FIG. 3.





## THE NEW "PERKINS" LAMP.

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In the new "Perkins" lamp are combined all points of excellence shown by experience to be essential to the production of a perfect article. It is upon the quality of the carbon filament and the character of its connection with the conductors that the value of an incandescent lamp mainly depends. Neither can be repaired. Any imperfection in manufacture is irremediable. Failure at any point renders the lamp worthless.

The "Perkins" filament is prepared with great care by a secret process. It is of pure carbon and to the eye presents the glossy sheen of polished steel. It is durable, efficient and free from discoloration. Following the rule generally adopted, the company guarantees for them an average life of six hundred hours, but in commercial use they burn much longer. Even a far higher degree of durability can be attained at the expense of efficiency, but except where the power is unlimited and cheap, efficiency is a factor not less important than life.

Of the standard lamp of 16 candle power, the "Mather" dynamo carries about nine to the actual horse power, the number rising a little above or falling a little below, according to variable external conditions.

Perhaps the most characteristic merit of the lamp is its freedom from discoloration. Under similar conditions it yields just as much light the thousandth hour of use as the first. Inventors have hitherto found this one of the most difficult points of excellence even to approximate. It is well known that the lamps put out under most systems begin to blacken perceptibly a few days after the current is turned on, and continue to

deteriorate till a large percentage of the light is intercepted by the coating of smoke which accumulates on the interior surface of the globe. This feature is especially objectionable in manufactories, where workmen are compelled to labor by a variable and failing light; not only does the eye suffer from the strain, but in many cases the quality of their work is seriously impaired.

In some instances where electricity is required for lighting, the motive power is limited or costly. To meet such cases The Mather Company produce a lamp of 16 candles and of 12 to the actual horse power. Here a great quantity of light is furnished at a corresponding loss of durability. Experience has shown that most consumers emphasize the relative value of life in the incandescent lamp, preferring to have a given amount of illumination diffused over a long period. In both cases substantially the same quantity of light is produced by the expenditure of the same amount of energy, the difference being that perhaps two of this class will be used up in doing the work of one standard lamp.

The Mather Company manufacture lamps of 16, 20, 24, 32, 50, 64 and 100 candle power.

The standard dynamo of the company is wound for a pressure of 126 volts and the standard lamp of the company is adapted to this pressure; for special purposes they make a lamp for any required pressure, from 50 volts upward.



## STANDARD LAMP, 16 C. P.

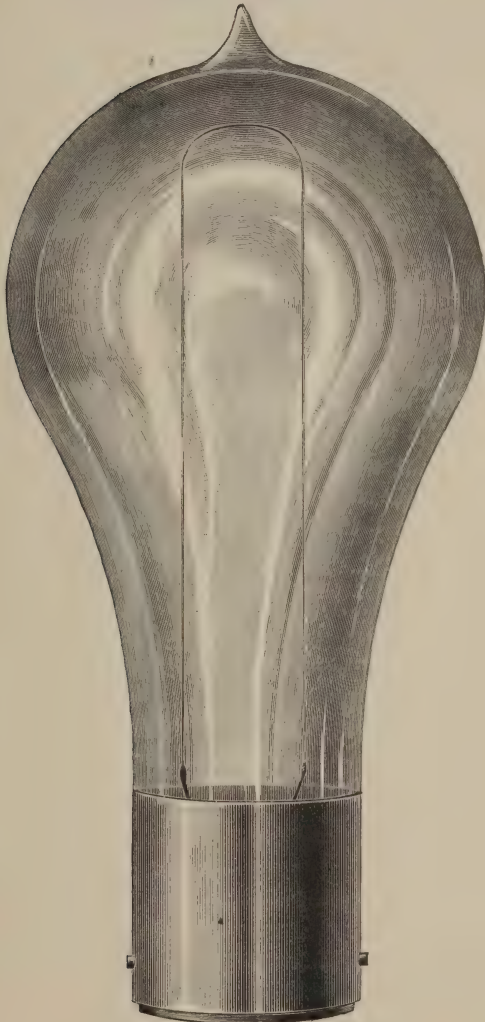


FIG. 4.



32 C. P. LAMP.

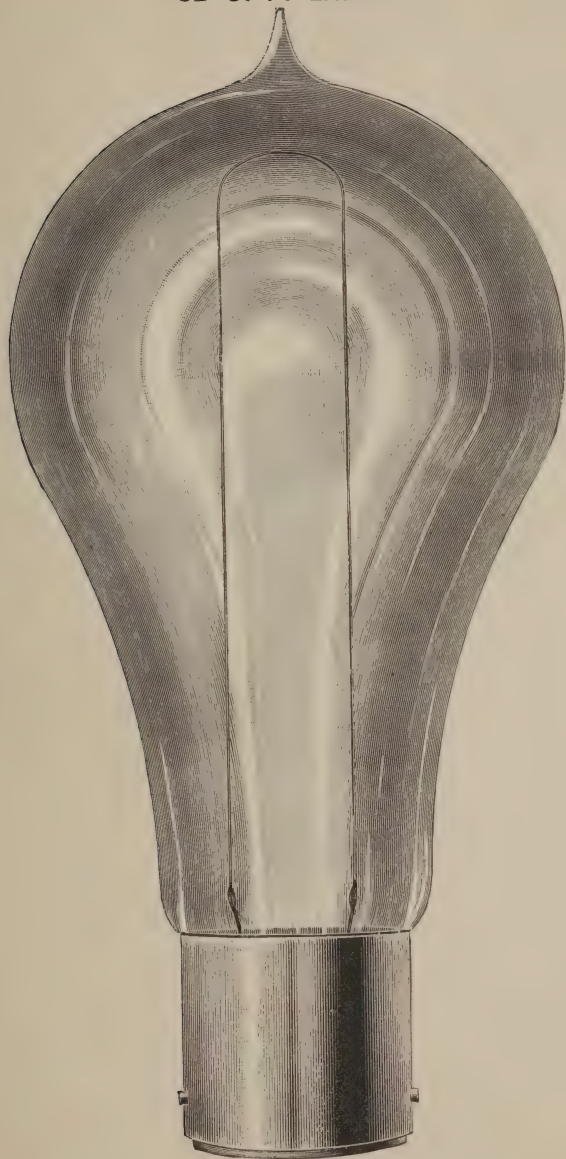


FIG. 5.





32 OR 64 C. P. LAMP.

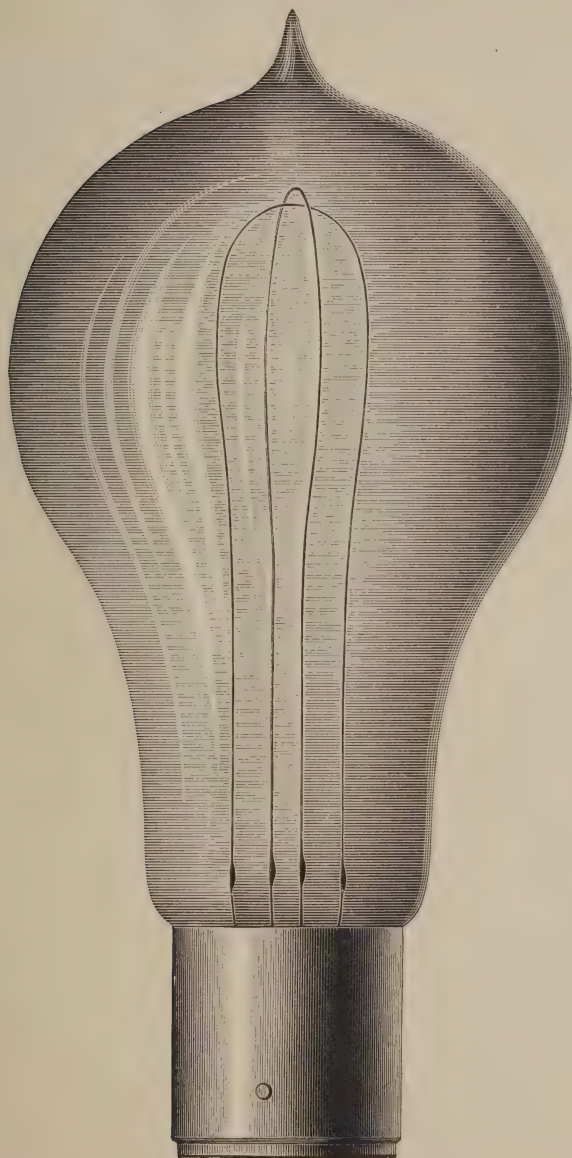


FIG. 6.





## SWITCHES AND CUT-OUTS.

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In addition to the dynamos and lamps manufactured by The Mather Electric Company, as shown in the preceding cuts, this company also manufacture a full line of incandescent appliances for installation uses, and the following cuts show a few of the new devices recently perfected for this purpose.

Fig. 7 represents the Standard Socket Switch of the company.

Fig. 8 is the Standard Lamp and Socket Switch combined.

Fig. 9 shows a device for burning the Standard Lamp, with one or two filaments.

Fig. 10 represents the Standard Switch for burning one or two filaments in 32, 64, 100 or 150 C. P. Lamps.

Fig. 11 shows a new device for Gang Switch.

Fig. 12 represents the Standard Branch and Main Line Cut-Outs.



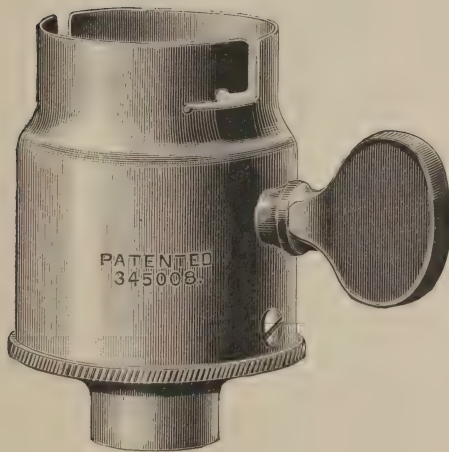


FIG. 7.





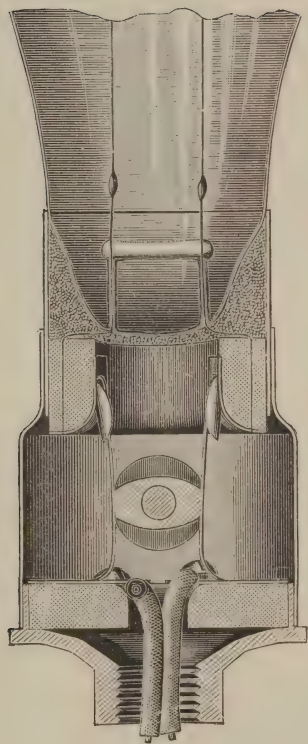


FIG. 8.



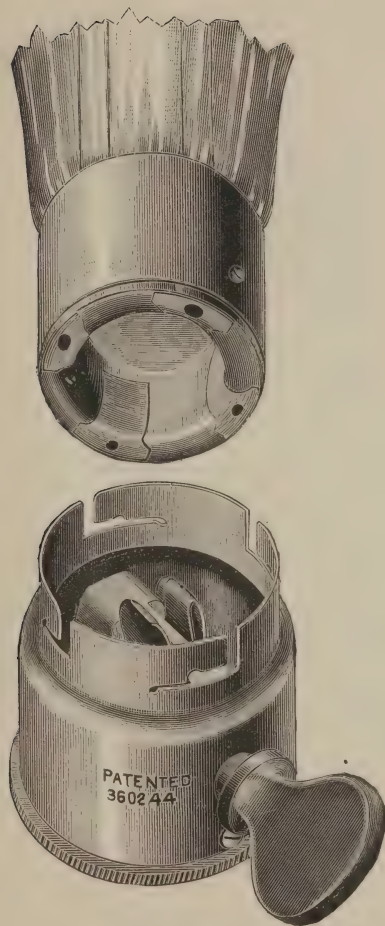


FIG. 9.





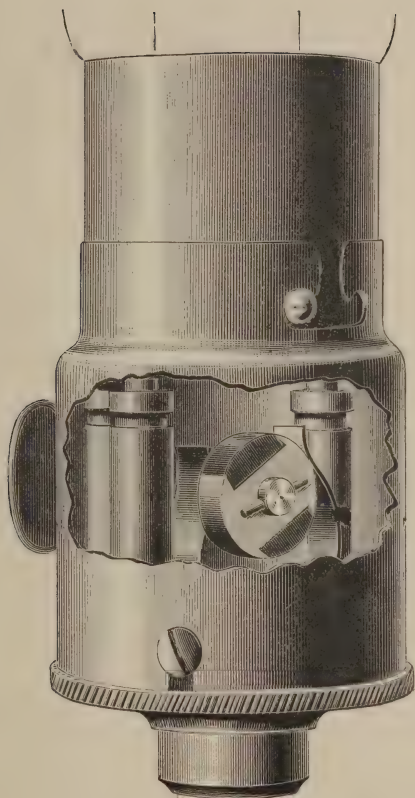


FIG. 10.



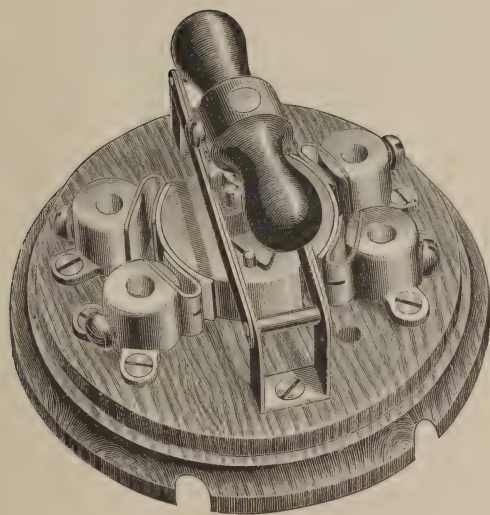


FIG. 11.





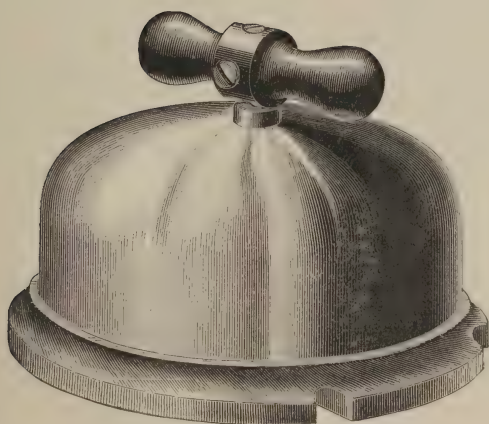


FIG. 11.



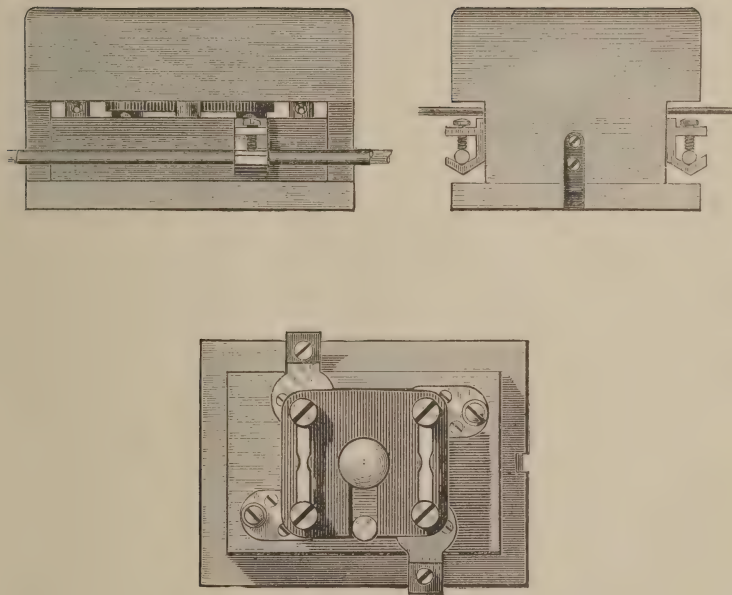


FIG. 12.



## DESCRIPTIVE LIST OF INCANDESCENT PLANTS

MANUFACTURED BY

THE MATHER ELECTRIC COMPANY,

MANCHESTER, CONN.

Type of Machine.	No. of Lights 16 C. P.	Speed Armature.	Pulley.	No. Leaves. Width.	Wood Base. Width.	Length over all.	Floor Room over all.	Iron Base.	Weight of Machine.	Weight of Base.	Total Weight.
			D. F.	Brushes.				W. L.			
D 1	25	3,900	3 $\frac{1}{2}$ x 3 $\frac{1}{4}$	2 25 1 $\frac{1}{4}$	13 $\frac{3}{4}$ in.	18 in.	24 x 27	None.	350		350
D 2	50	2,900	6 x 4 $\frac{1}{2}$	4 25 1	17 in.	31 $\frac{1}{4}$ in.	31 $\frac{1}{4}$ x 39	31 x 39	520	410	930
D 3	75	2,800	6 x 4 $\frac{1}{2}$	4 25 1	17 in.	34 $\frac{1}{4}$ in.	34 $\frac{1}{4}$ x 39	31 x 39	650	410	1,060
D 4	100	1,850	10 x 5 $\frac{1}{2}$	4 25 1 $\frac{1}{4}$	20 $\frac{3}{4}$ in.	43 in.	43 x 47	35 x 47	1,200	525	1,725
D 5	150	1,800	10 x 5 $\frac{1}{2}$	4 25 1 $\frac{1}{4}$	20 $\frac{3}{4}$ in.	43 in.	43 x 47	35 x 47	1,400	525	1,925
D 5 $\frac{1}{2}$	200		13 x 6 $\frac{1}{2}$	6 45 1	23 $\frac{1}{4}$ in.	49 $\frac{1}{4}$ in.	49 $\frac{1}{4}$ x 49	35 x 49	2,200	550	2,750
D 6	250	1,400	13 x 6 $\frac{1}{2}$	6 45 1	23 $\frac{1}{4}$ in.	51 $\frac{1}{4}$ in.	51 $\frac{1}{4}$ x 49	35 x 49	2,550	550	3,100
D 6 $\frac{1}{2}$	300		13 x 9 $\frac{1}{2}$	8 45 1	23 $\frac{1}{4}$ in.	54 $\frac{1}{4}$ in.	54 $\frac{1}{4}$ x 49	35 x 49	2,900	550	3,450
D 7	400	1,350	16 x 10 $\frac{1}{2}$	8 45 1	28 $\frac{3}{4}$ in.	62 in.	62 x 60	41 x 60	4,000	725	4,725
D 8	500	1,100	16 x 12 $\frac{1}{2}$	10 45 1	28 $\frac{3}{4}$ in.	67 $\frac{1}{2}$ in.	67 $\frac{1}{2}$ x 60	41 x 60	4,800	725	5,525



Below is given a partial list of the plants of this system now in operation :

PROVIDENCE WORSTED MILLS, Providence, R. I.,	.	.	.	30 Arc.
" " " " "	.	.	.	400 Incd.
HARTFORD MANILLA CO., Hartford, Conn.,	.	.	.	35 "
AGAWAM PAPER CO., Mittineague, Mass.,	.	.	.	50 "
JACOB NEW, 518 West 55th St., New York City, Silk Mills,	.	.	.	35 "
CAROLINA MILLS, Carolina, R. I.,	.	.	.	50 "
BRITISH HOSIERY CO., Providence, R. I.,	.	.	.	100 "
ALDRICH & MILNER, Moosup, Conn.,	.	.	.	100 "
AMERICAN MILLS, Rockville, Conn.,	.	.	.	100 "
COMMERCIAL GAZETTE, Cincinnati, Ohio,	.	.	.	300 "
WHITCOMB ENVELOPE CO., Worcester, Mass.,	.	.	.	100 "
Z. CRANE, JR. & BRO., Dalton, Mass., Paper Mills,	.	.	.	50 "
ALDRICH & MILNER, Moosup, Conn., 2d and 3d orders,	.	.	.	300 "
CHENEY BROS., So. Manchester, Conn., Silk Mills, 1st order,	.	.	.	6 Arc.
" " " " 2d "	.	.	.	100 Incd.
" " " " 3d "	.	.	.	40 Arc.
" " " " 4th "	.	.	.	400 Incd.
" " " " 5th "	.	.	.	25 Arc.
COMMERCIAL GAZETTE, Cincinnati, Ohio, 2d order,	.	.	.	300 Incd.
HARTFORD LIGHT AND POWER CO., Hartford, Conn.,	.	.	.	800 "
GATES BROTHERS, Hennepin Ave. Theater, Minneapolis, Minn.,	.	.	.	600 "
ATWOOD MACHINE CO., Stonington, Conn.,	.	.	.	250 "
J. H. STARIN, New York, Steamboat "Mattewan,"	.	.	.	75 "
" " " " "Sam Sloan,"	.	.	.	75 "
H. B. CLAFLIN & Co., New York, Dry Goods,	.	.	.	600 "
" " " " "	.	.	.	103 Arc.
THORNTON WORSTED MILLS, Providence, R. I.,	.	.	.	150 Incd.
PUTNAM WOOLEN CO., Putnam, Conn.,	.	.	.	300 "
HAMMOND & KNOWLTON, Putnam, Conn.,	.	.	.	150 "
FRANCIS THRON, Philadelphia, Pa.,	.	.	.	250 "
SEBAGO WOOD BOARD CO., So. Windham, Me.,	.	.	.	65 "



[COPY.]

THE WINONA PAPER CO., Holyoke, Mass., April 29, 1887.

THE MATHER ELECTRIC CO., Hartford, Conn.:

*Dear Sirs* :—In answer to your inquiry of the 26th inst., we take pleasure in saying that since our Electric Light Plant was started, in June last, it has been in operation every working night, and has never failed us.

The average life of the lamps has been over eleven hundred hours, and we have had no cause to regret our investment, or to wish that we had put in any other system.

Very truly yours,

THE WINONA PAPER CO.,

J. E. STONE, Ass't Treas.

[COPY.]

SEPTEMBER 21, 1886.

THE MATHER ELECTRIC CO.:

*Gentlemen* :—In reply to your inquiry about the duration of our Incandescent Lamps, we would say that we have run them all night and every night since April last, making over 1,200 hours; none of them have given out yet. We have not used all of our lamps, as our Finishing Department does not require lighting in the summer, but we have given you the record of the lamps that have been used continuously.

Yours truly,

Z. CRANE, JR. & BRO.  
B.

[COPY.]

OCTOBER 12, 1886.

MATHER ELECTRIC CO., Hartford, Conn.:

*Gentlemen* :—Yours asking in relation to the average life of the Incandescent Lamps furnished by your Company, in use at this Mill, also as to the cheapness of the Incandescent Light, as compared with oil. In answer to your first question, will state that we made a careful test of fifty lamps, keeping an exact record of the hours run, and have found the average life of the fifty lamps to be, to date, 1,000 hours. We have still burning from the lot fourteen lamps that have burned 1,575 hours. When they have all burned out we can get the exact average. In regard to your second question, as to cheapness, would say that, figuring the cost of steam at \$40.00 per H. P. per year, our lighting is costing us less than it did by oil. Considering the cleanliness and safety from fire, the saving of time in the care of fifty oil lamps we would gladly pay double price in preference to using oil again.

Yours respectfully,

THE OAKLAND PAPER CO.,

J. D. HENDERSON, Sup't.

[COPY.]

CUMBERLAND MILLS, ME., June 16, 1887.

MR. N. T. PULSIFER, Gen'l Manager:

*Dear Sir:*—We have not yet arrived at so satisfactory a basis of comparison as to the relative cost of lighting by electricity and by kerosene as we hope to do later for our own information, but so nearly as we can determine in an off-hand way, our present expenses for incandescent lighting are about \$400 per month, against \$300 when we were lighting by oil. But as we do some outside work now that did not come in formerly, and get a better light, I think it safe to say that we get more light for the same expense now than when we lighted by kerosene.

Yours truly,

JNO. E. WARREN.

[COPY.]

CUMBERLAND MILLS, ME., June 16, 1887.

MR. N. T. PULSIFER, Gen'l Manager:

*Dear Sir:*—We have now been running your Electric Light for about four months, and have over nine hundred 16 C. P. Incandescent Lights hung. Our aggregate lighting would average 6,000 hours daily, as one hundred or more of these lamps run throughout the whole twenty-four hours. We are well satisfied with the plant in all respects. It gives no more trouble and requires no more care than we anticipated. The life of the lamps is above your guaranty, and we get at all times, and under all conditions, a good and ample light. We can consistently recommend your system to any parties who contemplate lighting by electricity.

Yours truly,

JOHN E. WARREN.

[COPY.]

NEW YORK, December 20, 1886.

THE MATHER ELECTRIC CO., Hartford, Conn.:

*Gentlemen:*—In reply to your inquiry as to the results obtained with the Electric Light Plant which you installed in my mills in New York City, I would state that I am well pleased with its operation. The lamps are now showing a life of about 1,200 hours, running all day, and I am saving by its use one-half of the previous outlay for gas. I desire to increase my plant and would be pleased to have you call on me in reference to the matter.

Very respectfully,

J. NEW.

[COPY.]

THE SPRINGFIELD REPUBLICAN,

SPRINGFIELD, MASS., July 8, 1887.

N. T. PULSIFER, Esq., Hartford, Conn.:

*My Dear Sir:*—I am happy to testify to the excellence of the Mather System of electric lighting. We have now had one of your plants in our establishment for two years, and we have found the light satisfactory for our purpose.

It affords us a considerable saving over gas, and our compositors like it, especially because they secure through its use relief from the heat occasioned by the burning of gas.

Yours truly, SAM'L BOWLES.

[COPY.]

COMMERCIAL GAZETTE Co., Cincinnati, July 23, 1887.

THE MATHER ELECTRIC Co., Hartford, Conn.:

*Gentlemen:*—We note your favor at hand, and in answer have to say that your Electric Light has been used in our building for the past fifteen months and it has given satisfaction.

As you are aware, we have two dynamos, each having a capacity of 400 lights. The number of lights in the building is 350 in all and are used, as the case requires, in our composing room, press room and offices, and more freely than we formerly used gas. Our printers prefer the electric light to gas, and during the summer months it is more preferable, because of the absence of great heat.

From tests made, we find that the expense of the electric light is much less than our former gas bills.

Respectfully yours,

RICHARD SMITH, *Vice-President.*

[COPY.]

CINCINNATI, OHIO, July 15, 1887.

MATHER ELECTRIC Co., W. N. GRAY, Agent, Cincinnati, Ohio:

*Dear Sir:*—We have been using two of your Incandescent Dynamos, one 250 lights and one 150 lights, since January, 1886, lighting the People's Theater entirely and Heuck's Opera House partially with about 350 16 candle lamps and have been well pleased with the results obtained.

The dynamos work very nicely and have given us no trouble, and the life of the lamps has been very good.

We are especially pleased with the flexibility of the light for stage use, your arrangement of gang switches and dimming device enabling us to handle the light even better than gas.

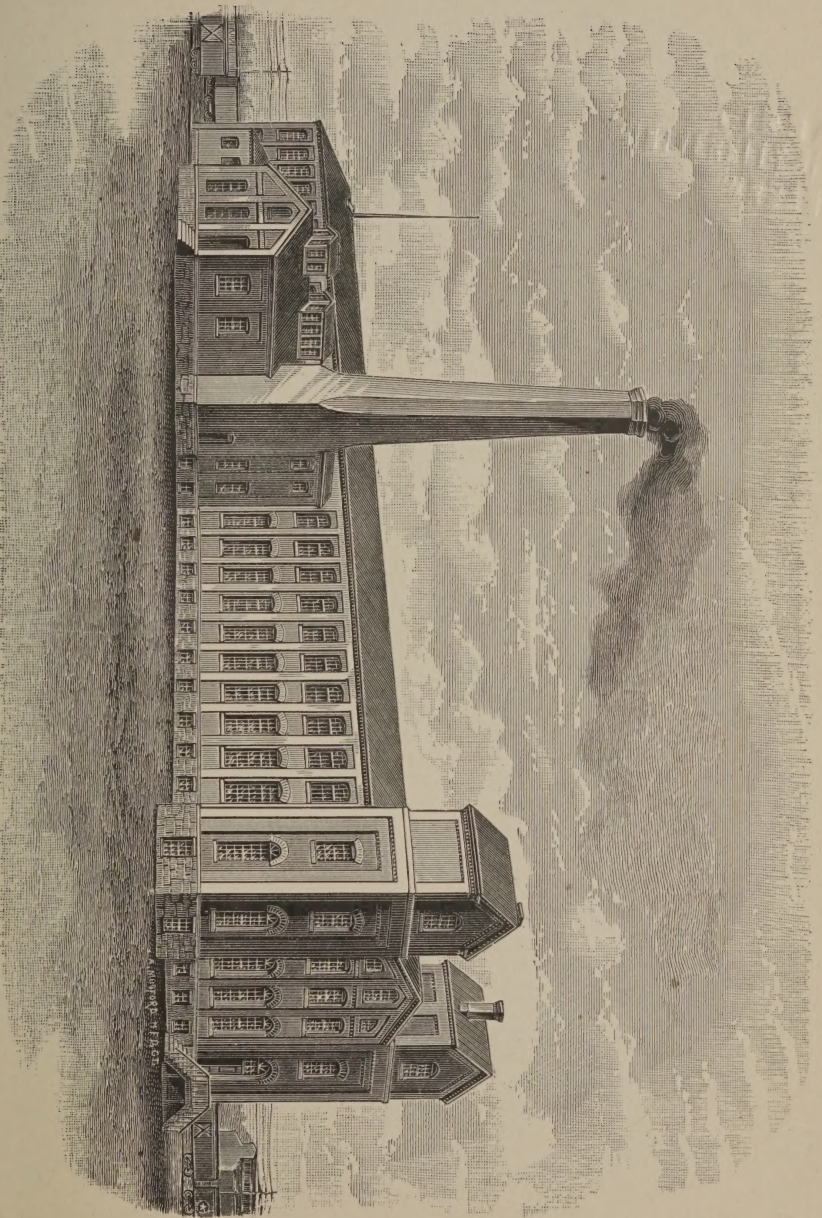
Yours, etc.,

THE HEUCK'S OPERA HOUSE CO.,

T. E. MITHOFF, *Treas.*



Factory of The Mather Electric Co., Manchester, Conn.







**Lithomount  
Pamphlet  
Binders**

**Gaylord Bros. Inc.**

Makers

**Syracuse, N. Y.**



UNIVERSITY OF ILLINOIS-URBANA

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ELECTRIC LIGHTING AND TRANSMISSION OF PO



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